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AGRICULTURAL OCCUPATIONS OTHER THAN FARMING IN MISSOURI.

BY- GRIFFITH, WARREN L.
MISSOURI STATE DEPT. OF EDUCATION, JEFFERSON CITY
MISSOURI UNIV., COLUMBIA, DEPT. OF AGR. EDUC.

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THE OBJECTIVES OF THIS STUDY WERE TO--(1) IDENTIFY PRESENT AND EMERGING OFF-FARM AGRICULTURAL OCCUPATIONS, (2) DETERMINE EMPLOYMENT TRENDS, (3) RELATE TYPES OF OCCUPATIONS TO STATE REGIONS, (4) DETERMINE CHARACTERISTICS OF THESE OCCUPATIONS, AND (5) DETERMINE CHARACTERISTICS OF AGRICULTURAL BUSINESSES. A SURVEY OF 3,315 FIRMS IN RURAL AREAS OF THE STATE BY 220 VOCATIONAL AGRICULTURAL TEACHERS REVEALS THAT 60 PERCENT OF THE 33,314 EMPLOYEES WERE AGRICULTURALLY ORIENTED. ALMOST ONE-HALF OF THE FARMS WERE FARM SUPPLY AND EQUIPMENT BUSINESSES. OTHER PREVALENT TYPES WERE FARM MACHINERY, LIVESTOCK, AND POULTRY FIRMS. THE MAJORITY OF THE FIRMS HAD BEEN IN BUSINESS OVER 15 YEARS, EMPLOYED 5 OR FEWER EMPLOYEES, AND WOULD BE WILLING TO HIRE SELECTED HIGH SCHOOL STUDENTS FOR SUPERVISED WORK EXPERIENCE. EMPLOYERS INDICATED THE NEED FOR 4,624 ADDITIONAL EMPLOYEES IN THE NEXT FIVE YEARS. EMPLOYERS PREFERRED THAT THEIR EMPLOYEES HAVE A HIGH SCHOOL EDUCATION, A FARM BACKGROUND, AND A MINIMUM AGE OF 18 TO 26. THIS STUDY IS PHASE I OF A FOUR PHASE STATEWIDE STUDY IN WHICH INTENSIVE COUNTY AND METROPOLITAN AREA SURVEYS AS WELL AS DEPTH STUDIES OF OCCUPATIONAL NEEDS WILL BE CONDUCTED. (JM)

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AGRICULTURAL OCCUPATIONS OTHER THAN FARMING IN MISSOURI

Joint Staff Study

State Department of Education
Agricultural Education Section
Jefferson City, Missouri

Agricultural Education Department
University of Missouri
Columbia, Missouri

Teachers of Vocational Agriculture
State of Missouri

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Directed By

Warren L. Griffin, Ed. D.

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INTRODUCTION

Agriculture in Missouri has changed and is continuing to change rapidly. Since the passage of the Smith-Hugh Act in 1917, our concepts and requirements in agriculture have changed. When programs of vocational agriculture were first initiated in our public schools, the term "agriculture" was interpreted to mean strictly farming and those operations carried out on the farm in the production of food and fiber. Today "agriculture" has become a more inclusive term. It not only includes those operations carried out on the farm, but also those concerned with supplying and servicing the farmer with the goods necessary for him to carry out his farming operations and those operations necessary to receive, process, and distribute those commodities which the farmer produces. Emphasis has shifted from a goal of producing enough to feed and clothe our nation's population to a goal of proper management of our farms in order to make them economical units. Also, in this period of time, our farms have become larger and more mechanized, creating a situation in which fewer people are needed to work the farms and more people are needed to supply and service the farmer and to process and distribute the commodities he produced. This transition has caused a shift of population, as well as job opportunities, away from the farm to other places where many tasks are performed to serve the farmers directly or indirectly.

The passage of the Vocational Education Act of 1963 stimulated much thought towards ways of expanding and improving instruction in vocational education. It charged vocational education in agriculture to offer instruction to prepare individuals for agricultural occupations, both in farming and other than farming occupations.

In order that information concerning agricultural occupations, other than farming, might be gathered, a state-wide study was devised. This study was divided into the following four phases:

Phase I

State-wide survey by the teachers of vocational agriculture of the agriculturally-related businesses found in their local community.

Phase II

A complete survey of certain counties throughout the state so that sample statistics might be applied and figures projected for the entire state.

Phase III

A survey of the metropolitan areas in the state where there are no teachers of vocational agriculture.

Phase IV

A depth study of each agricultural occupation in order that information concerning competences, needs, and skills involved in each might be determined.

The first phase of this study was completed by the teachers of vocational agriculture. As of July 20, 1964, 220 teachers had surveyed and sent in usable information on 3,315 agriculturally-related businesses.

The remaining portion of this paper will deal with <u>preliminary information</u> concerning the data submitted in Phase I.

PHASE I

Purpose of the Study

The primary purpose of this phase of the study was to gather general information concerning agriculturally-related businesses in the State of Missouri and to obtain a general listing of job titles in those businesses.

The primary objectives are as follows:

1. To identify present and emerging agricultural occupations, other than farming.

2. To determine the trends of employment in these occupations.

3. To relate the predominance of certain types of occupations to different sections of the State.

4. To determine specific characteristics about these occupations, such as educational requirements, residential background preferred, minimum age for entry and training provided by the employer.

5. To determine specific characteristics about agricultural businesses.

DESIGN OF THE STUDY

Data for the study were obtained by the teachers of vocational agriculture personally surveying the agriculturally-related businesses in their local school districts which employed personnel where a knowledge of agriculture was beneficial in the performance of their jobs. After perfecting the information, gathering forms and a manual for interviewing, twelve workshops were held throughout the state in order to train the teachers of vocational agriculture so that they might conduct their local survey. Sample news articles announcing the survey, pre-survey letters to be sent to prospective agriculturally-related businesses, letter of introduction and a list of business firms which pay sales tax were given to the teachers to be used in their local survey. Owners, managers, and other office personnel were then interviewed by the teachers of vocational agriculture during the period of June 1 through June 15, 1964, in order to obtain data concerning agricultural occupations, other than farming.

However, the following firms and agencies were not surveyed on the local level since they could more easily be surveyed on the state level:

National Forest Service

Department of Conservation

Agricultural Stabilization and Conservation Service

Soil Conservation Service

Federal Land Bank

Farm Home Administration

County Extension Service

Agricultural Education and College of Agriculture

State Department of Education

State Department of Agriculture

Note: In cooperation with the Springfield Chamber of Commerce, thirteen teachers of vocational agriculture in the Springfield area, collaborated in the surveying of the agriculturally-related businesses in the City of Springfield. Also, plans have been made by the St. Joseph Junior Chamber of Commerce to survey the agriculturally-related businesses in the St. Joseph area some time this fall. As more time and help becomes available, other urban areas will be surveyed.

TYPE AND NUMBER OF FIRMS

The intent of this study was for each teacher of vocational agriculture to survey all the businesses in his school district which might possibly employ personnel who need an agricultural background to perform their jobs or are agriculturally oriented. As of July 20, teachers from 220 schools had surveyed and sent to the State Office usable information on 3,315 firms which employ agriculturally oriented personnel. The firms and information included in Table I and in the following tables are those which were located in predominantly rural counties. In some cases where there were several teachers of vocational agriculture located in one county, an attempt was made to survey all the agriculturally-related firms in that county, otherwise the teacher only surveyed those agriculturally-related firms in his school district.

As can be seen in Table I, almost one-half (43.11%) of the firms surveyed came under the broad heading of Farm Supplies and Equipment. This was probably the best homogenous grouping since the firms included in this group were firms which handle,

TABLE I

TYPE AND NUMBER OF FIRMS NEEDING AGRICULTURALLY ORIENTED PERSONNEL

TYPE OF FIRM	NUMBER	PER CENT
1.0 Farm Machinery	616	18.58
1.1 Sales	62	1.87
1.2 Service	176	5.31
1.3 Sales and Service	378	11.40
2.0 Farm Supplies and Equipment	1429	43.11
2.1 Feed, Seed, Fertilizer and/or Chemicals	662	19.97
2.2 Farm Equipment and Materials	663	20.00
2.3 Supplies and Equipment	104	3.14
3.0 Livestock and Poultry	503	15.17
3.1 Marketing and Producing	152	4.58
3.2 Processing	351	10.59
4.0 Agronomy	278	8.39
4.1 Crops	207	6.25
4.2 Forestry	60	1.81
4.3 Soil Conservation	11	0.33
5.0 Ornamental Horticulture	151	4.55
6.0 Wildlife and Recreation	5	0.15
7.0 Farm Service	87	2.62
8.0 Agricultural Service	246	7.42
Total	**3315**	**100.00**

in some way, feed, seed, fertilizer and/or agricultural chemicals, hardware stores (162), lumber yards (222), bulk petroleum dealers (136), ready-mix concrete firms (24) and other firms handling agricultural equipment such as feed systems and dairy equipment (of the 663 firms reported in this group, 102 replied that they did not employ any agriculturally oriented employees and these were located mostly in the large towns), and the combination of any of the previously mentioned firms or those firms which handle a wide variety of agricultural supplies and equipment. The next most prevalent type of firms included were those which dealt with farm machinery, either by selling only, servicing only or by selling and servicing. Firms related to livestock and poultry industry were quite prevalent in the survey also. Included in this group were those firms which were primarily concerned with marketing and producing live animals and poultry and their products and those firms primarily concerned with processing and distributing livestock and poultry products.

Very few Wildlife and Recreational Agencies were reported since most of these are probably associated with the State Conservation Commission and will be surveyed and reported later. Likewise, none of the professional, federal, state and local agricultural agencies are included in this report.

There were very few farm service firms surveyed. One of the possible reasons for this could be that these services are performed mainly by farmers as a seasonal job to supplement their farm income or they are included in larger firms which have some other main function. Also, it is expected that the number of firms in the ornamental horticulture group might increase as the larger urban areas are surveyed.

FUNCTIONS PERFORMED BY FIRMS

The firms included in this study were of many kinds and were engaged in numerous functions. In a number of cases there was such an overlap of functions that it was difficult to decide which was the main function of the firm. It was obvious from the data presented in Table II that only a few agriculturally-related firms performed a single function. The 7,150 occurrences would indicate that almost 216 services were performed by each of the 3,315 firms. While many of the firms appeared to be highly specialized as to the type of commodity handled, firms were generally found to perform more than one of the business functions listed in the survey. Those firms which were concerned primarily with farm machinery sales and service reported predominantly that they performed both a retailing or wholesaling function along with a service. The majority of those firms which dealt with farm supplies and equipment performed a retailing function with wholesaling, purchasing and servicing being of lesser importance but frequently checked. Those firms which dealt primarily with livestock and poultry mainly performed retailing and then processing functions with the number of wholesaling and purchasing functions checked following closely.

Processing and retailing functions were reported mostly by firms dealing with crops, forestry and soil conservation practices with purchasing, wholesaling and storing functions being checked almost as many times as the previously mentioned two. Horticultural firms were primarily concerned with retailing, whereas, wholesaling and servicing were checked by somewhat lesser numbers. Other agencies and firms were primarily concerned with rendering a service.

TABLE II

FUNCTIONS PERFORMED BY FIRMS EMPLOYING AGRICULTURALLY ORIENTED PERSONNEL

TYPE OF FIRM	NUMBER OF FIRMS SURVEYED	FUNCTIONS OF FIRMS SURVEYED										
		RETAILING	SERVICING	PURCHASING	WHOLESALING	PROCESSING	TRANSPORTING	STORING	MANUFACTURING	CONSTRUCTING	OTHER
1.0 Farm Machinery	616	483	523	49	71	5	38	20	26	36	14
1.1 Sales	62	59	27	1	7	–	1	1	–	–	–
1.2 Service	176	50	157	7	16	1	2	–	22	28	4
1.3 Sales and Service	378	374	339	41	48	4	35	19	4	8	10
2.0 Farm Supplies and Equipment	1429	1296	378	487	368	236	226	187	181	61	31
2.1 Feed, Seed, Fertilizer and/or Chemicals	662	599	160	395	185	193	134	134	123	7	21
2.2 Farm Equipment and Materials	663	602	186	42	155	26	74	29	45	52	8
2.3 Supplies and Equipment	104	95	32	50	28	17	18	24	13	2	2
3.0 Livestock and Poultry	503	285	70	145	151	218	63	66	38	1	45
3.1 Marketing and Producing	152	69	30	62	41	22	36	7	7	–	37
3.2 Processing	351	216	40	83	110	196	27	65	31	1	8
4.0 Agronomy	278	133	40	113	102	129	34	70	32	15	8
4.1 Crops	207	105	33	100	71	106	25	79	14	5	6
4.2 Forestry	60	27	3	13	31	23	9	3	18	3	1
4.3 Soil Conservation	11	1	4	–	–	–	–	–	–	7	1
5.0 Ornamental Horticulture	151	112	49	8	41	11	8	4	2	5	20
6.0 Wildlife and Recreation	5	1	2	1	2	–	2	–	–	1	2
7.0 Farm Service	87	19	54	2	5	3	13	1	2	11	9
8.0 Agricultural Service	246	25	200	3	2	1	–	–	3	3	49
Total	**3315**	**2354**	**1316**	**808**	**742**	**603**	**384**	**348**	**284**	**133**	**178**
Per Cent		**71.01**	**39.39**	**24.38**	**22.38**	**18.19**	**11.58**	**10.50**	**8.57**	**4.01**	**5.37**

YEARS THE FIRM HAS BEEN IN BUSINESS

The majority (57.04) of the agriculturally-related businesses which were surveyed by the teachers of vocational agriculture had been in operation for over 15 years, as can be seen in Table III. There were the same number of firms which had been in business for one to three years and four to six years (10.86%). Likewise, the number of firms which had been in business for seven to nine years were only slightly more than (7.69%) as those which had been in business for 10 to 12 years (7.52%). There were fewer (6.03%) firms reported in the 13 to 15 years group than any other group.

This would indicate that most of the firms were in business in the 1940's. Very few firms seem to have been founded during the early and middle 1950's while the late 1950's and the 1960's seem to show an uptrend for new businesses being organized.

NUMBER OF WORKERS PER FIRM

As can be seen in Table IV, the 3,315 firms surveyed employed 33,314 workers, of which, 19,796 or 59.42 per cent were agriculturally oriented or needed an agricultural background in order to perform their job. Other than those firms which were related to wildlife and recreation, the farm machinery sales and service firms had the highest percentage (82.29%) of agriculturally oriented employees. The farm supply and equipment firms and the firms which are related crops, forestry and soil conservation had the next highest percentage of agriculturally oriented employees with the other types of firms having between 36 and 56 per cent of their employees agriculturally oriented. Firms which dealt with the livestock and poultry industry averaged employing more workers per firm (19.9) than any other type firm and this group of firms also employed, on the average, more agriculturally oriented

worker (9.5) than any other type firm.

The average number of workers per firm may not be very meaningful since these figures are unduly influenced by a few very large firms. When the data in Table V are viewed, it can be seen that almost 60 per cent of the 3,315 firms surveyed employed five or less workers, and that only slightly more than two per cent employed over 50 workers. As might be expected, the larger the number of workers per firm, the fewer the number of agriculturally related firms.

SOURCES USED IN SECURING NEW EMPLOYEES

It is important to know just what contacts and sources are used by agriculturally-related businesses in locating and recruiting new agriculturally oriented employees. As shown in Table VI, the established institutional and governmental placement agencies were not relied upon a great deal by the employers in securing new employees. Most frequently used by the employers for obtaining new agriculturally oriented personnel were: Friends Recommendations, Persons Dropping in Seeking Employment, and Present Employees Recommendations.

WILLINGNESS TO PROVIDE OCCUPATIONAL EXPERIENCE

When asked, "Would this firm be willing to hire a high school student to work after school,on Saturdays, and/or during vacation periods, who is under the supervision of a school instructor, in order that he might learn more about this type of firm or occupations within this firm?" , 2,287 of the 3,315 replied they would probably be willing to do this as shown in Table VII. Some of these replied they would do this provided: (1) it was the right kind of boy (2) if work was available (3) only during rush seasons, and (4) if permits were obtained from the union. Reasons for "no" answers - (1) insurance rules do not cover this age group (2) can't hire under 18 (3) work is too hazardous, and (4) labor union rules would not permit this.

Most firms were quite interested in cooperating in this type of a program.

TABLE III

YEARS FIRM HAS BEEN IN BUSINESS

TYPE OF FIRM	NUMBER OF YEARS					
	1 – 3	4 – 6	7 – 9	10 – 12	13 – 15	Over 15
1.0 Farm Machinery	78	63	59	55	49	312
1.1 Sales	11	4	5	9	4	29
1.2 Service	24	19	15	17	17	84
1.3 Sales and Service	43	40	39	29	28	199
2.0 Farm Supplies and Equipment	170	168	102	91	85	813
2.1 Feed, Seed, Fertilizer and/or Chemicals	91	81	56	52	50	332
2.2 Farm Equipment and Materials	74	74	43	31	29	412
2.3 Supplies and Equipment	5	13	3	8	6	69
3.0 Livestock and Poultry	45	52	34	36	27	309
3.1 Marketing and Producing	11	15	5	11	10	100
3.2 Processing	34	37	29	25	17	209
4.0 Agronomy	19	33	16	19	13	178
4.1 Crops	11	17	11	11	10	147
4.2 Forestry	5	15	5	8	2	25
4.3 Soil Conservation	3	1	–	–	1	6
5.0 Ornamental Horticulture	26	15	10	11	5	84
6.0 Wildlife and Recreation	–	–	1	–	1	3
7.0 Farm Service	9	8	9	14	5	42
8.0 Agricultural Service	13	21	24	23	15	150
Total	**360**	**360**	**255**	**249**	**200**	**1891**
Percent	**10.86**	**10.86**	**7.69**	**7.52**	**6.03**	**57.04**

TABLE IV

TOTAL EMPLOYMENT PER TYPE OF FIRM AND NUMBERS OF EMPLOYEES WITHIN THE FIRM WHO ARE AGRICULTURALLY ORIENTED

TYPE OF FIRM	NUMBER OF FIRMS SURVEYED	TOTAL EMPLOYMENT	AVERAGE EMPLOYMENT PER FIRM	EMPLOYEES THAT ARE AGRICULTURALLY ORIENTED	AVERAGE NO. PER FIRM THAT ARE AGRICULTURALLY ORIENTED	PER CENT AGRICULTURALLY ORIENTED
1.0 Farm Machinery	616	3,597	5.8	2,888	4.7	82.29
1.1 Sales	62	308	5.0	279	4.5	90.58
1.2 Service	176	634	3.6	431	2.4	67.98
1.3 Sales and Service	378	2,655	7.0	2,178	5.8	82.03
2.0 Farm Supplies and Equipment	1,429	11,090	7.8	7,513	5.3	67.75
2.1 Feed, Seed, Fertilizer and/or Chemicals	662	5,322	8.0	4,274	6.5	80.31
2.2 Farm Equipment and Materials	663	4,873	7.3	2,547	3.8	52.27
2.3 Supplies and Equipment	104	895	8.6	692	6.7	77.32
3.0 Livestock and Poultry	503	10,031	19.9	4,801	9.5	47.86
3.1 Marketing and Producing	152	3,074	20.2	2,382	15.7	77.59
3.2 Processing	351	6,957	19.8	2,419	6.9	34.77
4.0 Agronomy	278	4,287	15.4	2,621	9.4	61.14
4.1 Crops	207	3,356	16.2	1,879	9.1	55.99
4.2 Forestry	60	873	14.5	697	11.6	78.69
4.3 Soil Conservation	11	58	5.3	45	4.1	77.59
5.0 Ornamental Horticulture	151	1,152	7.6	596	3.9	51.74
6.0 Wildlife and Recreation	5	48	9.6	40	8.0	83.30
7.0 Farm Service	87	921	10.6	510	5.9	55.37
8.0 Agricultural Service	246	2,236	9.1	827	3.4	36.98
Total	**3,315**	**33,314**	**10.0**	**19,796**	**6.0**	**59.42**

TABLE V

FIRMS HIRING AGRICULTURALLY ORIENTED PERSONNEL GROUPED ACCORDING TO THE NUMBER OF WORKERS

TYPE OF FIRM	NUMBER OF WORKERS PER FIRM								
	5 or less	6 to 10	11 to 15	16 to 20	21 to 30	31 to 40	41 to 50	51 to 100	Over 100
1.0 Farm Machinery	370	177	42	13	7	4	2	1	–
1.1 Sales	36	22	4	–	–	–	–	–	–
1.2 Service	154	15	3	–	1	1	1	1	–
1.3 Sales and Service	180	140	35	13	6	3	1	–	–
2.0 Farm Supplies and Equipment	896	339	89	38	39	9	4	6	9
2.1 Feed, Seed, Fertilizer and/or Chemicals	380	175	55	19	18	7	2	2	4
2.2 Farm Equipment and Materials	470	134	22	12	12	2	2	4	5
2.3 Supplies and Equipment	46	30	12	9	9	–	–	–	–
3.0 Livestock and Poultry	231	105	56	30	31	14	3	14	19
3.1 Marketing and Producing	61	30	25	13	10	5	1	1	6
3.2 Processing	170	75	31	17	21	9	2	13	13
4.0 Agronomy	91	75	41	18	23	8	8	11	3
4.1 Crops	59	61	35	15	16	6	4	8	3
4.2 Forestry	24	12	5	3	7	2	4	3	–
4.3 Soil Conservation	8	2	1	–	–	–	–	–	–
5.0 Ornamental Horticulture	107	27	8	3	1	2	2	–	1
6.0 Wildlife and Recreation	2	1	1	1	–	–	–	–	–
7.0 Farm Service	61	10	3	5	1	2	–	2	3
8.0 Agricultural Service	147	45	22	10	11	3	4	1	3
Total	**1905**	**779**	**262**	**118**	**113**	**42**	**23**	**35**	**38**

TABLE VI

SOURCES MOST FREQUENTLY USED IN SECURING AGRICULTURALLY ORIENTED EMPLOYEES

TYPE OF FIRM	NUMBER OF FIRMS SURVEYED	SOURCE							
		FRIENDS RECOM-MENDATIONS	PERSONS DROPPING IN SEEKING EMPLOYMENT	PRESENT EMPLOYEES RECOM-MENDATIONS	PUBLIC HIGH SCHOOL	ADVER-TISEMENTS	STATE EMPLOYMENT SERVICE	COLLEGE PLACEMENT BUREAU	OTHER
1.0 Farm Machinery	616	284	235	210	55	53	37	5	104
1.1 Sales	62	27	23	24	5	7	5	2	13
1.2 Service	176	56	56	34	6	14	6	1	41
1.3 Sales and Service	378	201	156	152	44	32	26	3	50
2.0 Farm Supplies and Equipment	1429	692	525	503	131	112	84	45	157
2.1 Feed, Seed, Fertilizer and/or Chemicals	662	315	265	238	36	33	37	28	73
2.2 Farm Equipment and Materials	663	320	219	227	81	55	40	15	71
2.3 Supplies and Equipment	104	57	41	38	14	24	7	2	13
3.0 Livestock and Poultry	503	220	204	175	65	44	51	25	54
3.1 Marketing and Producing	152	62	66	56	16	11	13	9	15
3.2 Processing	351	158	138	119	49	33	38	16	39
4.0 Agronomy	278	99	161	103	23	21	25	9	18
4.1 Crops	207	69	119	67	18	18	19	8	15
4.2 Forestry	60	25	37	33	5	3	5	1	2
4.3 Soil Conservation	11	5	5	3	0	0	1	0	1
5.0 Ornamental Horticulture	151	54	49	32	18	19	16	12	27
6.0 Wildlife and Recreation	5	2	2	1	1	2	0	0	1
7.0 Farm Service	87	29	29	29	11	5	6	7	19
8.0 Agricultural Service	246	95	43	60	42	11	22	33	58
Total	**3315**	**1475**	**1248**	**1113**	**346**	**267**	**241**	**136**	**438**
Per cent		**44.49**	**37.65**	**33.57**	**10.44**	**8.05**	**7.27**	**4.10**	**13.21**

TABLE VII

WILLINGNESS TO HIRE A HIGH SCHOOL STUDENT TO WORK PART-TIME IN ORDER TO LEARN ABOUT THE FIRM OR JOBS IN THE FIRM

TYPE OF FIRM	YES	NO
1.0 Farm Machinery	459	157
1.1 Sales	41	21
1.2 Service	107	69
1.3 Sales and Service	311	67
2.0 Farm Supplies and Equipment	1002	494
2.1 Feed, Seed, Fertilizer and/or Chemicals	477	275
2.2 Farm Equipment and Materials	476	187
2.3 Supplies and Equipment	52	32
3.0 Livestock and Poultry	357	128
3.1 Marketing and Producing	118	34
3.2 Processing	257	94
4.0 Agronomy	182	96
4.1 Crops	141	66
4.2 Forestry	33	27
4.3 Soil Conservation	8	3
5.0 Ornamental Horticulture	101	50
6.0 Wildlife and Recreation	4	1
7.0 Farm Service	47	40
8.0 Agricultural Service	135	111
Total	**2287**	**1077**

AGRICULTURAL JOB TITLES, OTHER THAN FARMING CLASSIFIED BY AGRICULTURAL OCCUPATION FAMILIES REPORTED BY TEACHERS OF VOCATIONAL AGRICULTURE

1. Farm Machinery Sales and Service Occupations

JOB TITLE	JOB TITLE
Auctioneer, Farm Machinery	Manager, Repair Shop
Blacksmith	Manager, Sales
Body, Repairman	Manager, Service
Bookkeeper	Mechanic
Clean-up Man	Mechanic's Helper
Collector of Outstanding Debts	Mechanic, Small Motor
Deliveryman	Painter
Die Maker	Partsman
Fieldman, Farm Machinery	Ringman, Farm Machinery Auction
Foreman, Shop	Salesman, Farm Machinery
Foundryman	Salesman, Chain Saw, Lawn & Garden Equipment
General Farm Machinery Repairman	Set-up Man
Loaders, Farm Machinery	Shipping Clerk
Machinist, All Around	Stock Control Man
Machinist Helper	Tractor Driver
Manager, Credit	Truck Driver (Hauling Farm Mach.)
Manager, Farm Machinery Auction	Trucker's Helper
Manager, Retail and Repair Lawn & Garden Equipment & Chain Saws	Warehouseman
Manager, Office	Welder
Manager, Retail Farm Machinery	Welder's Assistant

II. Farm Supplies and Equipment Occupations

A. Feed, Seed, Fertilizer, Agricultural Chemicals

JOB TITLE	JOB TITLE
Bookkeeper, Feed Firms	Manager, Feed, Seed & Fertilizer
Bookkeeper, Fertilizer Firms	Manager, Feed, Seed, Fertilizer, Hardware, Lumber and others
Clean-up Man	Manager, Fertilizer Plant
Dehydrator Operator	Manager, Office
Feed Mixer	Manager, Produce Store
Feed Research and Development	Manager, Production
Fertilizer Blender	Manager, Sales, Feed, Seed,Fertilizer
Fertilizer Distributor	Mill Operator
Fertilizer Driller & Dynamiter	Mill Superintendent
Fertilizer Feeder	Nutritionist
Fertilizer Loader	Purchasing Agent
Fertilizer Shovelman	Pellet Mill & Feed Grinder Operator
Field Representative, Feed	Portable Feed Mill Operator
Foreman, Feed Mill	Salesman, Agriculture Chemical
Foreman, Fertilizer Plant	Salesman Drug & Vet. Supplies
General Workers,Feed,Seed and/or Fertilizer	Salesman, Feed,Seed,Fertilizer & Ag.Chem.
Laboratory Superintendent	Salesman, Feed
Manager, Agricultural Chemicals	Salesman, Fertilizer
Manager,Assistant,Feed,Seed & Fertilizer	Buyer, Grain
Manager, District	Truck Driver, Feed Delivery
Manager, Feed	Truck Driver, Fertilizer

B. HARDWARE, LUMBER YARD, BULK PETROLEUM, FARM TIRE, CONCRETE AND OTHER AGRICULTURAL EQUIPMENT AND SUPPLIES

JOB TITLE

Bookkeeper, Hardware
Bookkeeper, Lumber Yard
Bookkeeper, Petroleum
Concrete Plant Workers (Ready-Mix)
Corn-Cob Pipe Plant Workers
Draftsman
Engineers, Construction
Fieldmen, Corn Cob Pipe
Foreman, Lumber Yard
Gas Equipment Service Man
Leather Worker
Lumber Yardman
Manager, Dairy Equipment
Manager, Farm Building Construction
Manager, Farm Tire
Manager, Feed Systems
Manager, Hardware Store
Manager, Irrigation Equipment
Manager, Lumberyard & Bldg. Material
Manager, Petroleum
Manager, Production Planning Lumberyard

JOB TITLE

Manager, Ready-Mix Concrete
Manager, Truck Bed Plant
Salesman, Dairy Equipment
Salesman, Farm Buildings
Salesman, Farm Tire
Salesman, Feed Systems
Salesman, Hardware
Salesman, Irrigation Equipment
Salesman, Lumber & Bldg. Material
Salesman, Petroleum Products
Salesman, Twine and Wire
Serviceman, Dairy Equipment
Serviceman, Farm Tire
Serviceman, Feed Systems
Serviceman, Hardware
Serviceman, Irrigation Equipment
Service Station Attendant
Steel Farm Building Workers
Truck Driver, Concrete
Truck Driver, Lumber Delivery
Truck Driver, Petroleum Products

III. LIVESTOCK AND POULTRY INDUSTRY OCCUPATIONS

A. LIVESTOCK (Beef, Sheep and Swine)

JOB TITLE

Auction Clerk
Auctioneer
Auction Pen (Livestock Buying Station) Workers
Auction Ringmen
Boner
Bookkeeper, Livestock Buying Firm
Bookkeeper, Locker Plant
Butcher
Buyer, Livestock
Buyer, Wool, Hide & Fur
Clerical Workers
Dead Animal Pick-up
General Farm Worker
Grader, Hide
Grader, Meat
Herdsman, Beef
Herdsman, Swine

JOB TITLE

Hide, Wood and Fur Workers
Horse Trainer and Groomsman
Manager, Hide, Wool & Fur Firms
Manager, Livestock Buying Agency
Manager, Locker Plant
Manager, Meat Market
Manager, Packing Plant
Manager, Sales, Meat
Manager, Stockyards
Manager, Stockyards Office
Meat Cutter
Meat Order Clerk
Meat Wrapper
Salesman, Meat
Supervisor, Meat Cooler
Truck Driver, Livestock
Weigh Master

B. DAIRY

JOB TITLE	JOB TITLE
Bookkeeper, Creamery and Dairy Products	Manager, Dairy Case Grocery Store
Cheese and Butter Makers	Manager, Dairy Products Processing Plant
Cheese Grader	Milker
Churn Operator	Products Purchaser
Clean-up Man	Products Receiver, Weigher and Samples
Fieldman, Dairy	Products Tester & Quality Control
Foreman & Engineers, Dairy Products	Salesman, Products
General Dairy Products, Plant Workers	Specialist, Dairy
General Dairy Workers	Truck Drivers, Bulk Milk
Herdsman, Dairy	Truck Drivers, Route Milk
Manager, Creamery	

C. POULTRY

Bookkeeper, Hatchery	Incubator Operator
Buyers, Eggs	Killer, Poultry Plant
Buyers, Poultry	Manager, Egg Processing Plant
Candler	Manager, Flock
Caponizer	Manager, Hatchery
Clerical, Egg Plants	Manager, Poultry Processing Plant
Egg Breakers, Dryers and Candlers	Packing & Shipping, Poultry Plant
Eviserator, Poultry Plant	Pickers, Poultry Plant
Fieldman, Poultry	Poultry, Processors
Flock Workers	Poultry Research Farm Worker
Foreman, Poultry Processing Plant	Reversers, Poultry Plant
General Workers, Hatchery	Salesman, Chick
General Workers, Egg Processing Plant	Sexer, Chick
General Workers, Poultry Farm	Supervisor, Egg Plant
Hangers, Poultry Processing Plant	Truck Driver, Chick Delivery
Health and Sanitation, Hatchery	Truck Driver, Poultry

IV. CROPS, FORESTRY, AND SOIL CONSERVATION OCCUPATIONS

A. Crops

JOB TITLE

Analyst, Seed
Bookkeeper
Buyer, Grain
Buyer, Pecan
Buyer, Seed
Chemist, Flour Mill
Compress Worker
Consultant, Grain Storage
Cotton Oil Mill Worker
Cotton Warehouse Worker
Dehydrator (Alfalfa) Worker
Delintor Worker
Elevator Worker
Fieldman, Seed
Flour Mill Workers
Foreman, Seed
General Farm Worker
Gin Clerk
Gin Laborers (Yardman)
Ginner
Gin Press Operator
Gin Stand Man
Gin Sucker Man
Gin Tie Out & Weigher
Grader, Cotton
Grader, Grain
Grain Weigher & Inspector
Manager, Cotton Oil Mill
Manager, Elevator
Manager, Gin

JOB TITLE

Manager, Flour Mill
Manager, Field Crops (Corn)
Manager, Office, Seed
Manager, Potato Processing Plant
Manager, Sales, Seed
Manager, Seed Plant
Manager, Seed Production
Manager, Vegetable Sales
Mushroom Workers
Night Watchman
Orchard Packers
Orchard Workers
Popcorn Packager
Popcorn Processor
Produce (Vegetable) Workers
Potato Plant Workers
Purchasing Agent, Potatoes
Salesman, Pecan
Salesman, Seed
Salesman, Vegetable
Scale Operator, Elevator
Seed Cleaner
Seed Processors
Soybean Mill Workers
Superintendent, Cotton Oil Mill
Superintendent, Flour Mill
Superintendent, Seed Plant
Supervisor, Cotton Oil Mill
Quality Control, Seed
Truck Farm Workers
Vegetable Processors

B. FORESTRY

JOB TITLE	JOB TITLE
Block Setter	Log Turner
Box Punchers and Pullers	Log Washer
Buyer	Lumber Stacker
Cabinet Maker	Manager, Charcoal Plant
Charcoal Bagger & Sacker	Manager, Sales, Lumber
Charcoal Burner	Manager, Saw Mill
Contractor - (Driver)	Machine Operator, Saw Mill
Cut-off Sawman	Millwright
Edgerman	Nailers
Foreman, Saw Mill	Off Bearer
Foreman, Woods	Planer
Furniture Gluers	Post-Mill Workers
Furniture Sprayer	Salesman, Charcoal
Graders, Flooring	Salesman, Lumber
Grader & Inspector, Lumber	Sanders
High Lift Operator	Sawyer
Jointerman	Slab Loader
Laborers, Woods	Steam Boiler Operator
Laborers, Saw Mill	Ton Boat & Crane Operator
Lift Truck Operator	Truck Driver, Logging
Log Bucker	Tying Machine Operator
Log Cutter	Warehouseman
Log Roller	Wood Fillers
Log Skidder	Wood Burner

C. SOIL CONSERVATION

JOB TITLE
Agricultural Engineer
Agriculture Engineer Technician
Heavy Equipment Operator
Forester
Manager, Construction Company
Soil Conservationist
Soil Scientist

V. ORNAMENTAL HORTICULTURAL OCCUPATIONS

JOB TITLE
Arboriculturist
Bedders & Plant Setters
Clerical Worker
Floral Workers
Designers, Flowers
Foreman, Nursery
Garden Center Employee
General Laborers
Greenhouse Worker
Groundsman
Horticulturalist
Landscape Gardeners
Manager, Florist
Manager, Nursery
Manager, Park
Manager, Propagation

JOB TITLE
Manager, Termite Control
Nursery Employee
Pest Control Employee
Salesman, Ag. Chemicals
Salesman, Florist
Salesman, Nursery
Superintendent, Greens
Termite Control Specialist
Termite Control Workers
Tree Pruner
Tree Surgeon
Truck Driver, Nursery
Truck Driver, Flower Deliverer
Warehouse Man
Yardman

VI. FARM SERVICE OCCUPATIONS

JOB TITLE
Airplane Crop Duster
Airplane Flagman
Artificial Insemination
Bulldozer, Operator
Carpenter
Clerical Workers
Custom Combine Operator
Custom Haybalers
Custom Spray Operator
Custom Tractor Operator
DHIA Tester
Earth Movers
Electrical Engineer
Electrical Estimators
Electrical Groundman
Electrical Laborers
Electrical Lineman
Electrical Machine Operators
Electrical Technicians
Electrical Use Advisor
Electrical Wire Inspector
Electrician
Feed Grinder
Fence Manufacture Workers
Livestock Trucker

JOB TITLE
Manager, Chain Hook Plant
Manager, Construction Firm
Manager, Electrical Company
Manager, Pest Control
Manager, Sales, Electrical Co.
Manager, Spray Company
Maintenance Man
Mason
Pest Control Worker
Plumber
Plumber's Assistant
Printer, Artist
Printer, Press Operator
Printer, Typist
Road Equipment Operators
Road Laborers
Rodmen
Roofers
Salesman, Electrical
Salesman, Pest Control
Superintendent, District Electrical
Supervisor, Asst. Electrical
Supervisor, Right-of-Way
Truck Driver, Electrical
Tin Smith
Foreman, Electrical Co.

VII. AGRICULTURAL SERVICE

JOB TITLE	JOB TITLE
Agronomist	Farm Loan Inspector
ACP Clerk	Farm Managerial Service
ACP Performance Supervisor	Fertilizer Inspector
ACP Program Man	FHA Supervisor
ACP Reporters	Fire Tower Operator
ASCS Administrative Clerk	Geneticist
ASCS Office Manager	Horticulturalist
Bacterioligist	Journalist
Bank Agricultural Agent	Kennel Boy
Bank Cashier	Laboratory Technician
Bank President	Lay Veterinary Inspector
Bank Vice-President	Librarian
Biologist	Olericulturalist
Botanist	Pathologist
Broker	PCA Administrator
Clerical	PCA Administrative Assistant
Conservation Agent	PCA Field Representative
County Assessor	Pharmacist
County Clerk	Pomologist
Director of Research Farm	Public Relations Agent
Economist	Radio Farm Director
Engineer, Structural	Research Assistant
Entomologist	Salesman, Insurance
Extension Agricultural Agent	Salesman, Real Estate
Extension Balanced Farming Agent	Superintendent of Research Farm
Extension Director	USDA Grader
Extension Home Economist	USDA Inspector
Extension Soil Tester	Veterinary Helper
Extension Youth Agent	Veterinary Supply Sales
Farm Bureau Agent	Veterinarian

VIII. WILDLIFE AND RECREATION

JOB TITLE
Clerical Worker
Fish Hatchery Workers
Quail Farm Workers
Manager, Fish Hatchery
Manager, Quail Farm
Manager, Wildlife Preserve
Wildlife Conservation Aids
Pisiculturalist

HUBERT WHEELER
Commissioner

Vocational
Area Code 314
Phone 636-8171

STATE DEPARTMENT OF EDUCATION
DIVISION OF PUBLIC SCHOOLS
JEFFERSON BUILDING
P. O. BOX 480
JEFFERSON CITY, MISSOURI

August 14, 1965

SENT TO: Instructors of Vocational Agriculture

SENT BY: Carl M. Humphrey, Director, Agricultural Education, and Robert L. Hayward, Assistant Supervisor, Agricultural Education

SUBJECT: THE STUDY OF AGRICULTURAL OCCUPATIONS OTHER THAN FARMING IN MISSOURI

Additional information for the study "Agricultural Occupations Other Than Farming in Missouri" has been summarized and is enclosed. A publication covering part of the study was made available at the 1964 state conference. If you did not receive it, drop us a card and one will be mailed to you. (Both parts of the study are enclosed for new teachers.)

The total study is planned by steps or parts. Other groups and areas should be studied as time and personnel permit. A careful study of the work to date will, no doubt, prove the importance and opportunities in the many fields of agriculture in addition to farming.

SUMMARY STATEMENTS

on the Study of

"AGRICULTURAL OCCUPATIONS OTHER THAN FARMING IN MISSOURI"

In the first stage of this study, instructors of Vocational Agriculture surveyed 3,315 firms employing 33,314 workers. Approximately 60 percent of the employees were agriculturally oriented.

Only agriculturally-related businesses in predominantly rural areas were contacted by the 220 instructors. Metropolitan areas have not been studied although agricultural business and industry predominate in many of them.

Local, state and federal agencies employ many people in agricultural work. The study has not included these groups as of this date.

Almost one-half of the firms surveyed came under the broad heading of farm supplies and equipment. The next most prevalent type of firms included those which dealt with farm machinery. Firms related to the livestock and poultry industries were quite prevalent in the survey.

The majority of the businesses surveyed had been in operation for over fifteen years. Sixty percent of the firms surveyed employed five or less workers.

Sixty-nine percent of the employers would be willing to hire selected high school students for supervised work experience.

Employers indicated the need for 4,624 additional employees in the next five years. The need for persons with agricultural competencies will be 18 percent greater by 1969 according to the employers.

Employers listed the total number of employees and the educational requirement which they accepted at the time of employment. Sixty-three percent of the employees were required to have a high school education and 87 percent were requested to have a high school or beyond high school education.

The employers listed the residential background preferred for their employees. It appeared that those presently employed had about the same residential background as that preferred by employers. Employers indicated that 70 percent of their employees should have a farm background and 20 percent a small-town residential background.

Employers indicated the minimum age for employment of those working for them at the time of the interview. Eighty-two percent of the employees were from 18 to 26 years of age when employed.

The training provided by employers according to the total number of employees at the time of the survey and the percentages according to the various kinds of training provided indicates a need for broader training programs. Informal on-the-job training was provided to 50 percent of the employees which was far in excess of any other type of training.

TABLE VIII

NUMBER OF PERSONS NEEDING AGRICULTURAL COMPETENCIES WHO ARE EMPLOYED FULL TIME, PART TIME AND SEASONALLY IN AGRICULTURAL BUSINESSES, INDUSTRIES AND AGENCIES, 1964, AND NUMBER NEEDED IN FIVE YEARS

OCCUPATIONAL FAMILY	TOTALS		FULL TIME		PART TIME		SEASONAL	
	5 YEARS HENCE	PRESENT	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
Farm Machinery Sales & Service	4319	3545	2938	184	180	44	187	12
Farm Supplies and Equipment	10997	8945	7013	692	414	124	667	35
Livestock and Poultry Industries	7892	7179	4892	921	432	162	513	259
Agronomy	4604	4077	2020	142	254	24	1377	260
Ornamental Horticulture	1023	822	502	108	64	22	92	34
Wildlife and Recreation	51	46	32	5	8	1	0	0
Farm Service	1227	1047	798	67	123	2	56	1
Agricultural Service	941	769	474	126	76	22	70	1
Totals	**31055**	**26431**	**18670**	**2245**	**1551**	**401**	**2962**	**602**

Employers indicated the need for 4,624 additional employees in the next five years. The need for persons with agricultural competencies will be 18 percent greater by 1969.

TABLE IX

LOWEST EDUCATIONAL REQUIREMENT ACCEPTABLE FOR NEW EMPLOYEES

	NONE	8TH GRADE	HIGH SCHOOL GRADUATE	POST HIGH SCHOOL	COLLEGE DEGREE	TOTAL
No. of Positions	508	913	6339	1478	878	10144
Percentage	4	9	63	15	9	100

Employers listed the total number of employees and the educational requirement which they accepted at the time of employment. The total number of positions by educational groups is listed and is also shown on a percentage basis.

Sixty-three percent of the employees were required to have a high school education. Eighty seven percent should have a high school or beyond high school education.

TABLE X

RESIDENTIAL BACKGROUND PREFERRED BY EMPLOYERS

	FARM	SMALL TOWN	URBAN	NO PREFERENCE	TOTAL
No. of Positions	7038	2019	56	1342	10144
Percentage	70	20	.05	9.95	100

The employers listed the residential background preferred for their employees. It appeared that those presently employed had about the same residential background as that preferred by employers.

Employers indicated that 70 percent of their employees should have a farm background and 20 percent a small-town residential background.

TABLE X!

MINIMUM AGE FOR EMPLOYMENT

(Percentage By Job Level)

	AGES					
	NO ANSWER	UNDER 18	18 & 19	20-25	26-30	OVER 30
Unskilled	2	17	54	24	2	1
Professional	4	0	12	68	12	4
Technical	2	7	27	55	4	5
Proprietors and Managers	4	2	13	56	19	6
Supervisory	2	4	19	58	14	3
Clerical	2	6	50	38	3	1
Sales	1	7	33	53	5	1
Service Workers	1	4	43	45	7	0
Skilled Workers	1	9	40	46	3	1
Semi-skilled Workers	1	12	50	34	2	1
Total - All Job Levels	**2**	**7**	**35**	**47**	**7**	**2**

Employers indicated the minimum age for employment of those working for them at the time of the interview. The number of employees was secured according to job levels and the figures in this table are shown on a percentage basis by job level and age for employment.

Eighty-two percent of those employed were from 18 through 25 years of age when employed.

TABLE XII

TRAINING PROVIDED BY EMPLOYERS

	NO RESPONSE	FORMAL ON JOB	INFORMAL ON JOB	PART TIME DAY CLASS	EVENING CLASS	SHORT COURSE	SPECIALIZED COURSE	CORRES COURSE	OTHER	NONE	TOTAL
Number of Employees	11	1198	6026	84	94	492	1176	30	32	1001	10 144
Percentage	1	11.8	59	.9	1	5	11.6	.3	.3	10	100

This table shows the training provided by employers according to the total number of employees at the time of the survey and the percentages according to the various kinds of training provided.

Informal on-the-job training was provided to 59% of the employees which is far in excess of any other type of training.

TABLE XIII

NUMBER OF PERSONS WHO NEED AGRICULTURAL COMPETENCIES IN EIGHT OCCUPATIONAL FAMILIES BY LEVEL OF EMPLOYMENT

LEVEL OF EMPLOYMENT	FARM MACH. SALES & SERVICE	FARM SUPPLIES AND EQUIPMENT	LIVESTOCK AND POULTRY	AGRONOMY	ORNAMENTAL HORTICULTURE	WILDLIFE AND RECREATION	FARM SERVICE	AGRICULTURAL SERVICE	TOTAL
Professional	5	57	29	12	7	7	24	206	347
Technical	18	59	145	44	42	6	180	37	531
Proprietors and Managers	485	1384	412	300	108	5	43	111	2848
Supervisory	93	288	329	178	37	2	45	21	993
Clerical	298	797	396	245	29	3	57	156	1981
Sales	580	1812	595	150	105	0	13	75	3330
Service	43	55	48	64	1	0	22	76	309
Skilled	1565	1215	1392	596	196	9	331	17	5321
Semi-skilled	381	2369	2971	1165	201	14	176	51	7328
Unskilled	77	907	862	1323	96	0	156	19	3440
Total	**3545**	**8945**	**7179**	**4077**	**822**	**46**	**1047**	**769**	**26428**